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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/686,958	10/12/2000	Shinsuke Nakajyo	001344	5708

7590 10/03/2002

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EXAMINER

LUHRS, MICHAEL K

ART UNIT PAPER NUMBER

2824

DATE MAILED: 10/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/686,958

Applicant(s)

NAKAJYO ET AL.

Examiner

Michael K. Luhrs

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 29 August 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: search history.

## DETAILED ACTION

### *Drawings*

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 8/29/02 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

### *Specification*

2. The disclosure is objected to because of the following informalities: Amendment A. p. 2 has a spelling error; see after "[Effect of Invention]", line 2, change "sine" to --since--.

Appropriate correction is required.

### *Status of Claims*

3. Amendment A has obviated the previous office action for claims 1-5 Maruyama in view of Glenn, since Murayama patent and the subject patent application are assigned to the same assignee, is acknowledged. The examiner withdraws the rejection. Therefore, Claims 1-5 are still pending.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morgan et. al. (USPN 4,967,146) in view of Takehara et. al. (USPN 6,358,776 B1) and Corbett (USPN

Art Unit: 2824

' 5,383,361). Morgan et. al. teach of a testing process, that includes markings row and column of each die (line 55 column 4), of positional marking as shown in Fig. 2 and as described explicitly in column 2, lines 57-64. Morgan et. al. indicate that prior art practice has been to assemble the chips into a finished product before testing, (lines 60-62 column 4) whereas Morgan et. al. explicitly teach conducting the testing of the chips, on the wafer (as indicated in Morgan et. al.'s claims 4 and 5). Morgan et. al. fail to disclose the marking of the result of the electrical test, such record is not explicit, although a computerized testing line 51, column 4, and the resulting discarding of failed chips, lines 58-59, column 4, certainly prompts the necessity of having the result of the test, but explicit marking is absent. Since Morgan et. al. fail to teach a second mark Morgan et. al. also fails to teach the second mark location. Morgan et. al. teach of the subsequent dicing in lines 1-3 column 5 wherein the wafer is broken into the individual device chips--last action of Morgan et. al.'s claim 5 for example. Takehara et. al. teach of marking the chip with a fail mark (i.e. second mark) (lines 4-5 column 5) and has location on the front side on the resin see Fig. 2A, designation 12, and therefore Takehara et. al. fail to show the mark on the rear surface of the wafer. Takehara et. al. teach of the sealing resin, line 3 column 5.

Takehara et. al. disclose the resin and mark for the purposes of sealing the chip and marking the testing result.

Since Morgan et. al. and Takehara et. al. are all from the same field of endeavor, the purpose disclosed by Takehara et. al. would have been recognized in the pertinent art of Morgan et. al..

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to add the resin to seal the chip and add the mark to show the test result as taught by Takehara et. al. to the process of Morgan et. al..

Corbett teaches of marking the chip using a laser marking and teaches that marking can be provided on either side of a chip line 10 column 5. Since Morgan et. al., Takehara et. al. and Corbett are all from the same field of endeavor, the purpose disclosed by Corbett would have been recognized in the pertinent art of Morgan et. al. and Takehara et. al.. It would have been obvious at the time the invention was made to a person having ordinary skill in the art that the chip could be marked on either side as taught by Corbett and that the test result taught by Takehara et. al. could thus be marked on either side.

Regarding claim 2, since it has been pointed out above that Corbett teaches of marking on either side, it is therefore also applicable to the positional mark taught by Morgan et. al. now would thus apply to claim 2 as it did for the result of the testing, mark, as it is taught by Takehara for claim 1. It would have been obvious at the time the invention was made to a person having ordinary skill in the art that the chip could be marked on either side as taught by Corbett and that the positional marking taught by Morgan et. al. could thus be marked on either side.

Regarding claims 3 and 4 and the sealant on both sides of the wafer and attaching of the resin sheet. Corbett teaches of the resin material (line 46 column 7) or resin sheeting material (e.g. ribbon material, line 33 column 7), in conjunction with marking. Therefore, in light of Takehara teaching of the various ways to graphically present the marks (lines 6-12 column 5) it would be obvious to attach a resin sheet and provide markings to indicate position as alternatives to marking methods as taught by Corbett for marking purposes. Regarding claim 5, it has been

Art Unit: 2824

pointed out above of the electrical test taught by Takehara et. al. and of the marking of the electrical test as taught by Takehara et. al. and of the marking of either side as taught by Corbett. It would have been obvious at the time the invention was made to a person having ordinary skill in the art conduct the electrical test taught by Takehara et. al. marking of the electrical test as taught by Takehara et. al. and whereas such marking could be marked on either side as taught by Corbett that would thus include the rear side.

### *Conclusion*

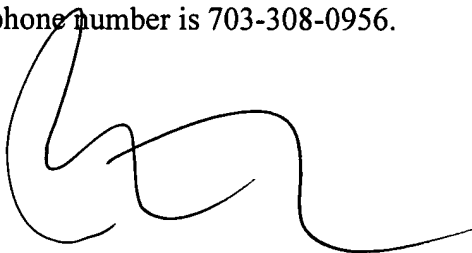
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael K. Luhrs whose telephone number is 703-305-2864. The examiner can normally be reached on M-F; 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard T. Elms can be reached on 703-308-2816. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Michael K. Luhrs  
September 30, 2002



RICHARD ELMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800